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ORIGINALLY FILED

Docket No. 00800.019US3
WD # 454766.wpd

WARF Ref. No. P01279US-PO86 (MEJ)

Clean Version of Pending Claims

METHODS TO ALTER LEVELS OF A DNA REPAIR PROTEIN (as amended)

Applicant: John H.J. Petrini et al.

Serial No.: 09/837,138

5. A method of altering the amount of a DNA repair polypeptide in a cell, comprising:
 - (a) introducing into a host cell an isolated nucleic acid molecule comprising a nucleic acid segment encoding a vertebrate DNA repair polypeptide having a molecular weight of about 95000 Da as determined by SDS-PAGE, or a biologically active fragment thereof, operably linked to a promoter functional in the host cell, so as to yield a transformed host cell; and
 - (b) expressing the nucleic acid molecule in the transformed host cell as recombinant DNA repair polypeptide, wherein the amount of the recombinant polypeptide produced by the transformed cell is different than the amount of the DNA repair polypeptide produced by a corresponding untransformed cell.
6. A method of altering the amount of a DNA repair polypeptide in a cell, comprising:
 - (a) introducing into a host cell a DNA segment comprising the complement of at least a portion of a nucleic acid molecule comprising a nucleic acid segment encoding a vertebrate DNA repair polypeptide having a molecular weight of about 95000 Da as determined by SDS-PAGE, or a biologically active fragment thereof, operably linked to a promoter functional in the host cell, so as to yield a transformed host cell; and
 - (b) expressing the DNA segment in the transformed host cell as antisense RNA so as to decrease the amount of the DNA repair polypeptide in the transformed cell.
16. A transgenic mouse whose cells contain a chimeric DNA sequence, said chimeric DNA sequence comprising:

a transcription control sequence and an isolated nucleic acid molecule comprising a nucleic acid segment encoding a vertebrate DNA repair polypeptide having a molecular weight of about 95000 Da as determined by SDS-PAGE, or a biologically active fragment thereof, wherein the transcription control sequence and the nucleic acid molecule are operatively linked to each other and are integrated into the genome of the mouse, and wherein the nucleic acid molecule is expressed in the transgenic mouse so as to result in said mouse exhibiting increased amounts of the DNA repair polypeptide.

17. A method of using a transgenic mouse to screen for an agent that modulates a DNA repair polypeptide, comprising:
 - (a) administering the agent to the transgenic mouse, wherein the transgenic mouse comprises a chimeric DNA sequence comprising a transcription control sequence operatively linked to a nucleic acid molecule comprising a nucleic acid segment encoding a vertebrate DNA repair polypeptide having a molecular weight of about 95000 Da as determined by SDS-PAGE, or a biologically active fragment thereof, wherein the chimeric DNA sequence is integrated into the genome of the mouse, and wherein the nucleic acid molecule is expressed as the DNA repair polypeptide in the transgenic mouse; and
 - (b) determining whether said agent modulates the amount of the DNA repair polypeptide in the transgenic mouse relative to a transgenic mouse of step (a) which has not been administered the agent.
20. The method of claim 5, 6 or 17 wherein the nucleic acid segment comprises SEQ ID NO:1.
21. The method of claim 5, 6 or 17 wherein the nucleic acid segment encodes SEQ ID NO:2.

22. The method of claim 5 or 6 wherein the host cell is a mammalian host cell.
23. The mouse of claim 16 wherein the nucleic acid segment comprises SEQ ID NO:1.
24. The mouse of claim 16 wherein the nucleic acid segment encodes SEQ ID NO:2.
25. The mouse of claim 18 wherein the DNA repair polypeptide has SEQ ID NO:2. *non functional*
26. (New) A transformed host cell prepared by the method of claim 5 or 6.
27. (New) The transformed host cell of claim 26 which is a mammalian cell.